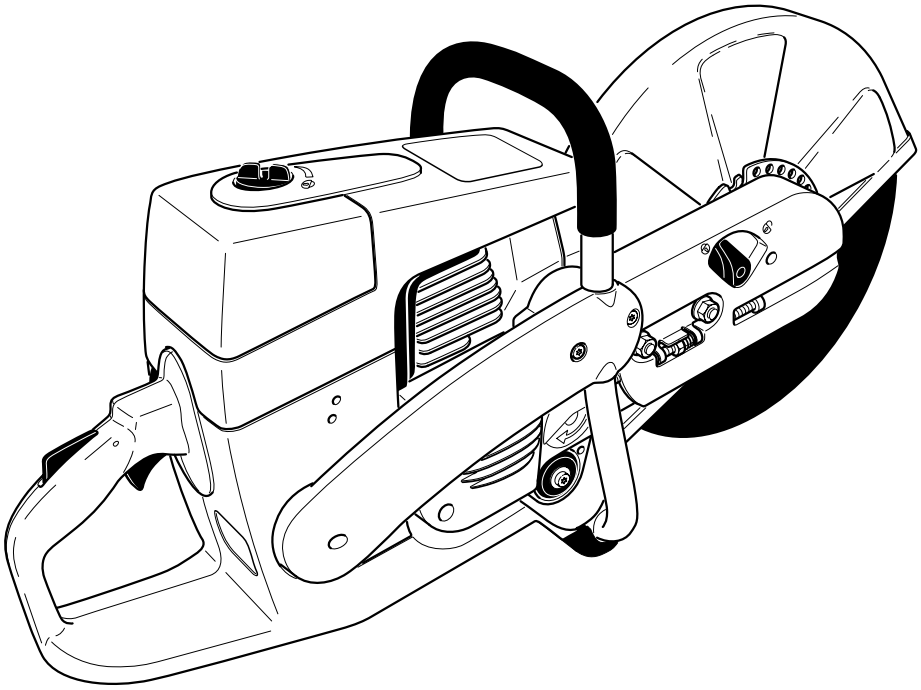
Service Manual



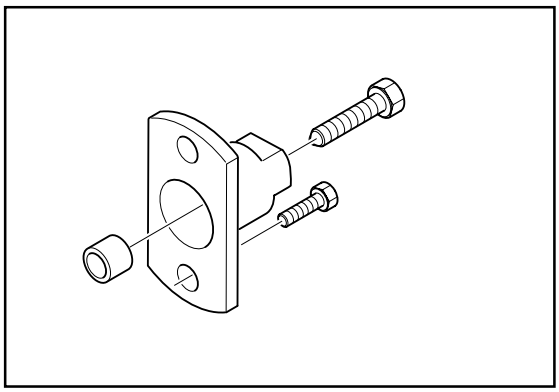
PC-6212 HappyStart
PC-6214 HappyStart
PC-7312 HappyStart
PC-7314 HappyStart

DOLMAR

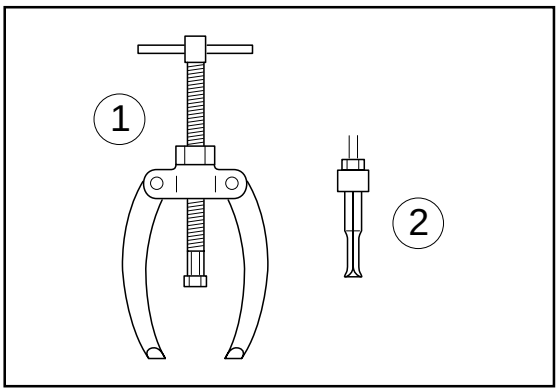
Index

Index	Special tools	page	3
	Technical data		4
02	Clutch, clutch drumm		5
04	Ignition		6 - 10
05	Starting system		11
06	Carburetor, intake system		12-13
07	Cover, air filter		14
08	Front handle, rubber mounts		15
09	Fuel filter		16
10	Cylinder, piston		17
11	Crankcase, crankshaft		18
12	Checking operation		19
13	Cutting attachment		20 - 21
	Torques		22
	Notizen		23

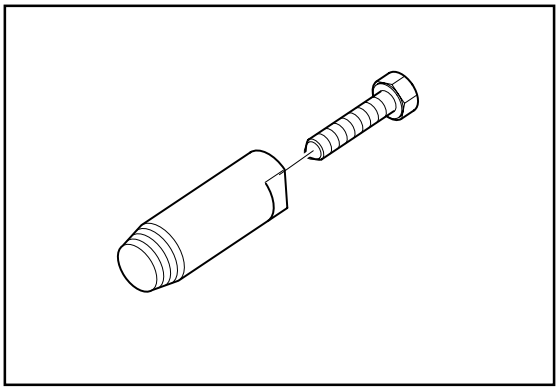
Special tools



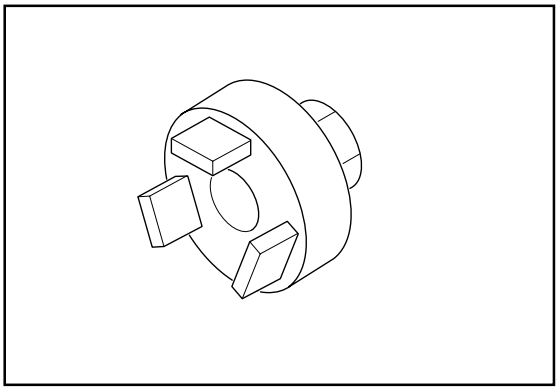
Puller for Flywheel
957.427.010



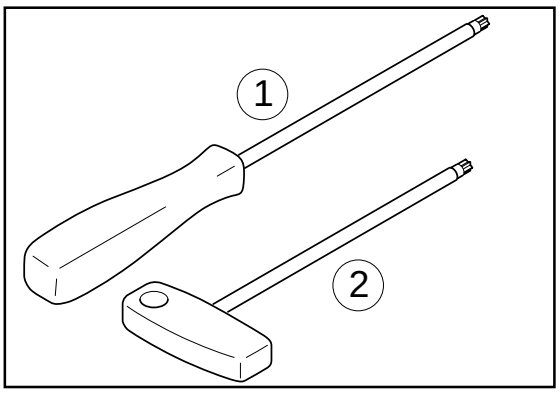
Puller for ball bearing
Counter support (1) 955.102.015
Inside pulller (2) 955.102.025



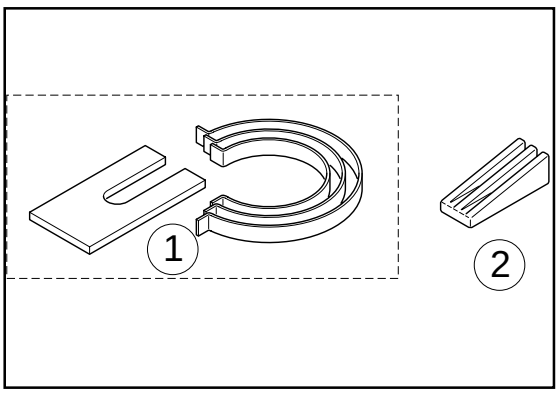
Puller for oil seals
944.500.900



Mounting tool for
clutch hub
944.500.570



Screw driver Torx (T27)
(1) 944.500.860
(2) 944.500.862



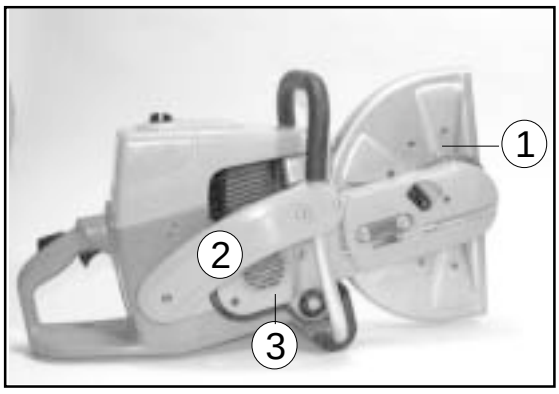
Set of pistonring tension belt (1)
944.600.001
Piston stop wedge (2)
944.602.000

Technical data

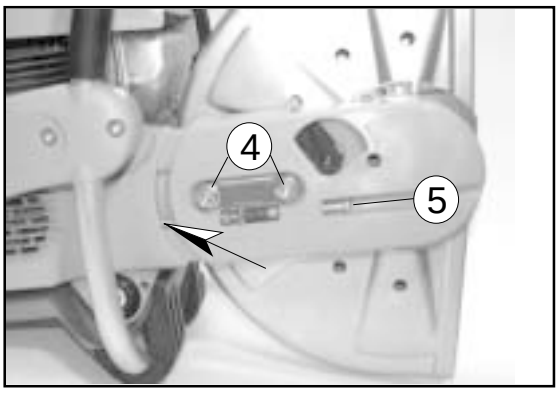
		PC-6212	PC-6214	PC-7312	PC-7314
Displacement	cm^3	62		73	
Bore	mm	46		50	
Stroke	mm	37		37	
Max. power	kW	3,3		4,2	
Max. torque	Nm	4,0		5,0	
Idling speed	1/min	2.500		2.500	
Clutch engagement speed	1/min	3.800		3.800	
Engine speed limitation	1/min	9.350		9.350	
Max. spindle speed	1/min	4.300		4.300	
Sound pressure level $L_{pA\ eq}$ per EN 1454 [1) 4)]	dB (A)	97		99	
Sound power level $L_{WA\ eq}$ per EN 1454 [1)]	dB (A)	109		110	
Vibration acceleration $a_{h,w}$ per EN 1454					
- Tubular handle (idle/rated spindle speed)	m/s^2	7 / 5		7 / 6	
- Rear handle (idle/rated spindle speed)	m/s^2	8 / 6		8 / 7	
Carburetor (diaphragm carburetor)	Type	TILLOTSON HS-273 A			
Ignition system (with speed limitation)	Type	electronic			
Spark plug	Type	NGK BPMR 7A / BOSCH WSR 6F / CHAMPION RCJ 6Y			
Electrode gap	mm	0,5		0,5	
Fuel consumption at max. load per ISO 8893	kg/h	1,65		2,1	
Specific consumption at max. load per ISO 8893	g/kWh	500		500	
Fuel tank capacity	l	1,1		1,1	
Mixture ratio (fuel/two-stroke oil)					
- when using DOLMAR HP 100 high-performance oil		100:1		100:1	
- when using DOLMAR oil		50:1		50:1	
Cutting disc for 80 m/sec. [2)] (DSA approved): dimensions	mm	300 / 20,0 / 5 [3)]	350 / 25,4 / 5 [3)]	300 / 20,0 / 5 [3)]	350 / 25,4 / 5 [3)]
Arbor diameter	mm	20,0	25,4	20,0	25,4
V-belt		AVX 838 LA		AVX 838 LA	
Overall weight (tanks empty, without cutting disc)	kg	9,7	9,9	9,8	10

[1)] Figures derived in equal part from idle and max.-speed operation.
[2)] Circumference speed at max. engine speed
[3)] Outside diameter / arbor hole / thickness
[4)] At the workplace (at user's ear)

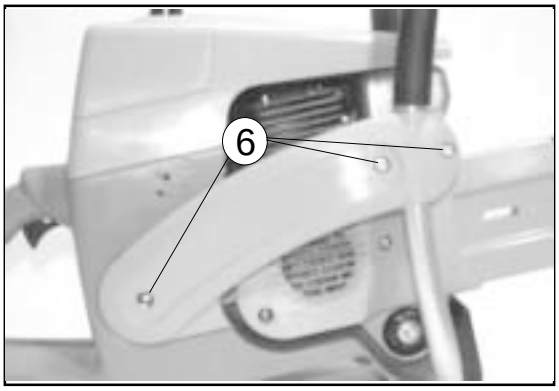
02 Clutch, clutch drum



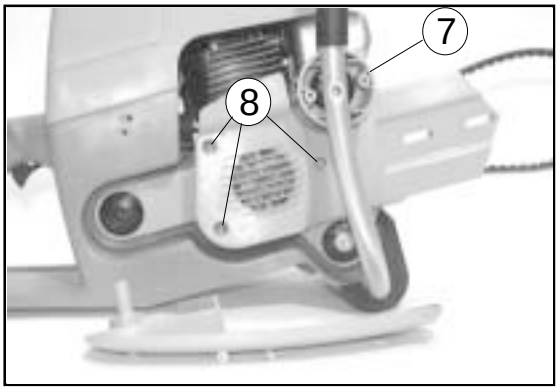
02-01 Dismantling the clutch/drum
To dismantle the clutch and drum, remove the cutting device (1), strut (2) and V-belt cover (3).



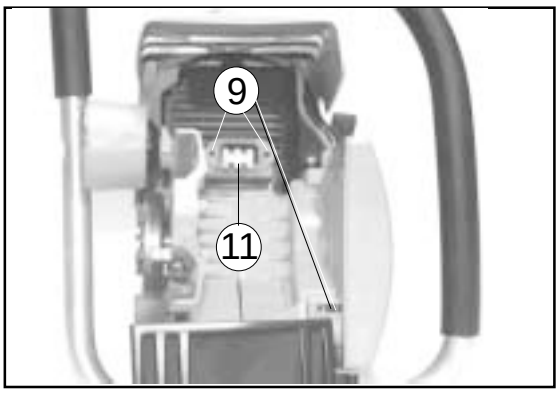
02-01 Dismantling the clutch/drum
To remove the cutting device, loosen the fixing screws (4). Remove screw (5) to the point where the end of the screw projects from the cover (arrow).



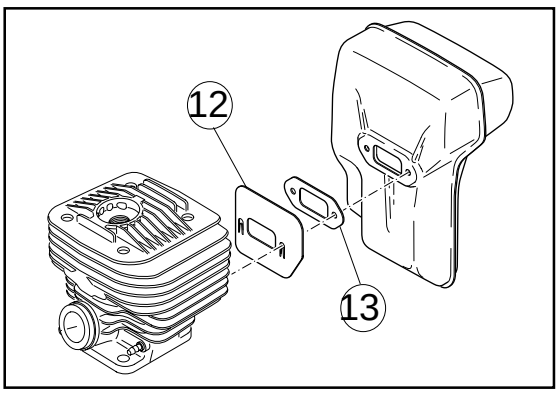
02-01 Dismantling the clutch/drum
The side strut is fixed with 3 screws (6) to the tank and the collector (7) for the right upper damper device.



02-01 Dismantling the clutch/drum
The cover for the V-belt is fixed to the crank-case with 3 screws (8).

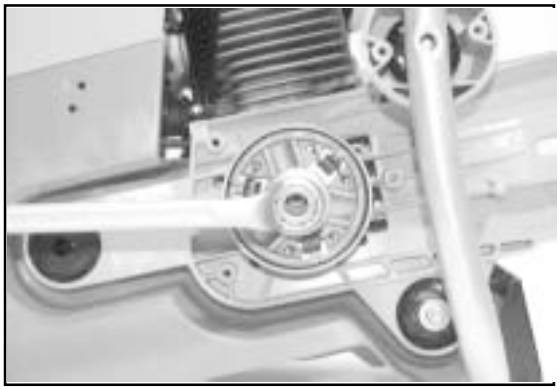


02-01 Dismantling the clutch/drum
To remove the clutch and drum, the piston must be blocked. To do this, unscrew the 3 screws (9) fixing the muffler and insert the piston stop wedge (944.602.000) in to the exhaust port of the cylinder (11).



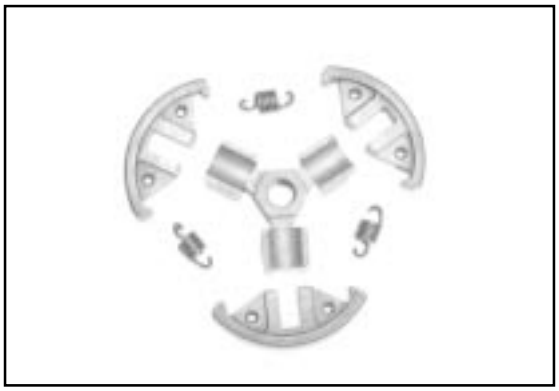
02-01 Mounting muffler and heat plate
When mounting the muffler ensure that the heat plate is installed correctly (see drawing). Note: The heat plate (12) comes directly on to the cylinder, then the gasket (13) and muffler.

04 Ignition system



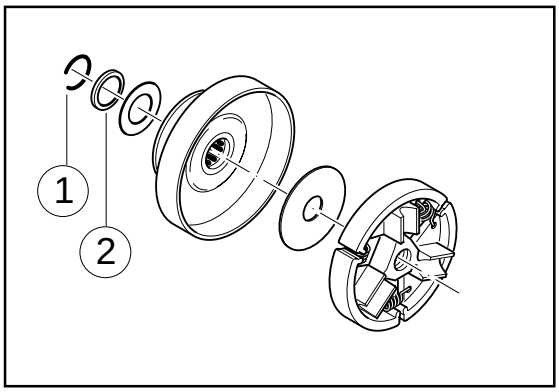
02-02 Dismantling the clutch/drum
Unscrew the clutch with the special tool (parts no. 944.500.570) and a 19mm wrench.
Caution: left-handed thread

02-01 Repairing the clutch
The tension springs of the clutch can be removed/ replaced with pointed pliers. If spares are required, the 3 tension springs are only available as individual parts.

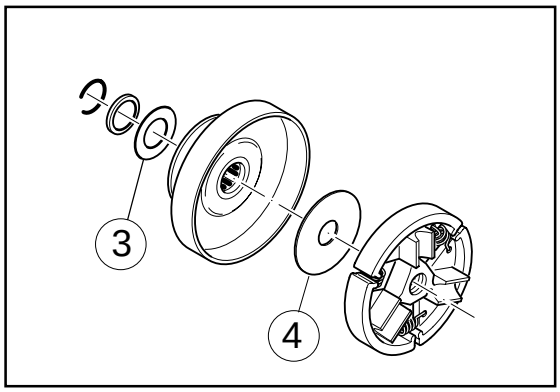


02-01 Repairing the clutch
The tension springs should only be replaced as a set if replacement is required.
If the hub / fly weight is defective, the complete clutch must be replaced.

02-02 Mounting the drum
Before installing the clutch drum, the needle bearing that is pressed in must be greased. (Multipurpose grease 944.360.000)

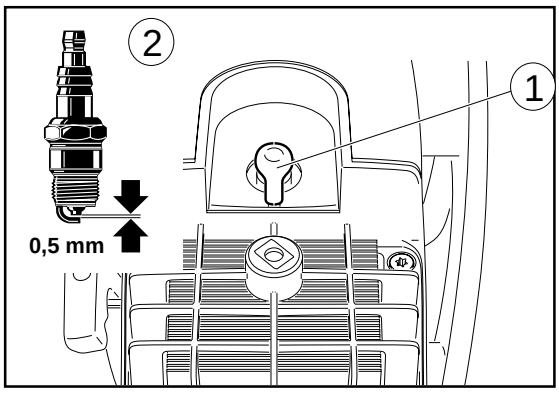


02-02 Mounting the clutch/drum
When mounting the drum and the clutch, be careful to mount the washers in the right order.
(1) Ring (sits in the groove of the crankshaft)
(2) End collar (with recess towards ring)

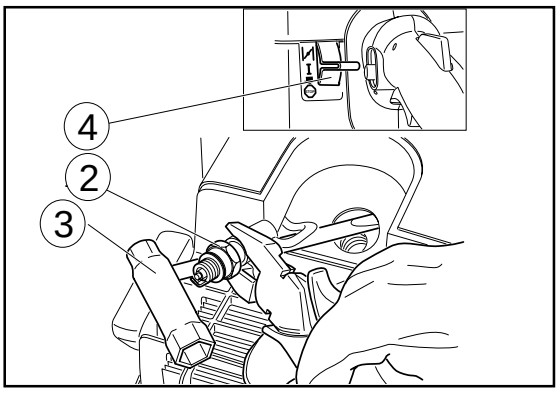


02-02 Mounting the clutch/drum
(3) Guide washer
(4) Clutch guide washer,before assembly, press into the support on the back of the clutch hub.

04 Ignition system



04-01 Checking the spark plug
Remove filter hood.
Pull spark plug socket (1) off the spark plug and remove spark plug (2).



04-01 Checking the spark plug
Connect spark plug (2) with plug socket and hold to earth (3). Pull out starter cable. If no spark is produced, repeat procedure with new spark plug.
Note: Switch (4) must be in position “I”.

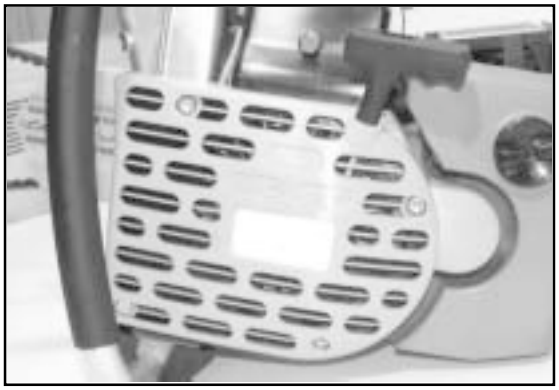
04-01 Checking the spark plug
Combustion and motor performance will be improved if the spark plugs function properly. Dirty or faulty spark plugs should therefore be cleaned or replaced.

04-01 Checking the spark plug
The spark plug has serious oil carbon deposits. Clean or replace spark plug.

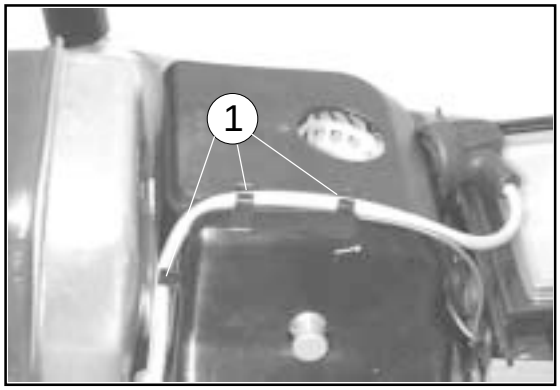
04-01 Checking the spark plug
Spark plug is showing signs of wear (burning off) on the middle electrode.
Spark plug must be replaced.

04-02 Replacing the plug connector
Hold the plug connector spring using pointed pliers and push the rubber cap backwards over the ignition cable.
Note: grease the ignition cable slightly beforehand.

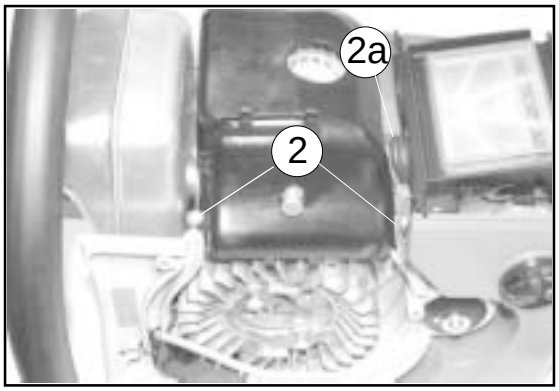
04 Ignition system



04-03 Removing the ignition/ short circuit cable
Unscrew the starter device that is fixed with 4 screws.

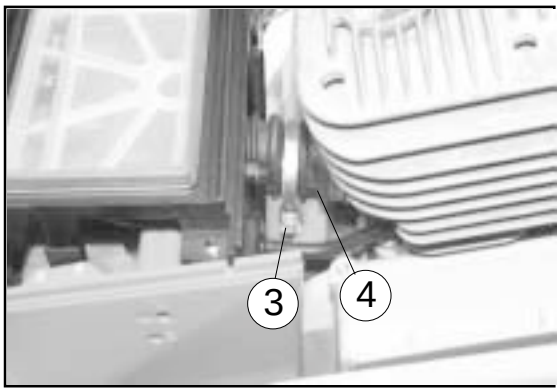


04-03 Removing the ignition/ short circuit cable
Unscrew filter hood (07-03).
Remove ignition and short circuit cable from the guide (1) of the hood.

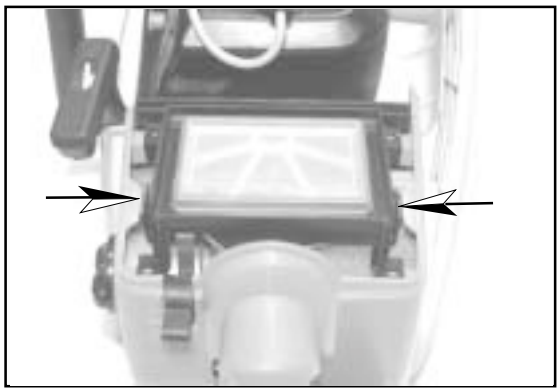


04-03 Removing the ignition/ short circuit cable
Remove hood - to do this, unscrew the 3 screws (2).
The screw (2a) is also the fixing for the earth cable.

04-03 Removing the ignition/ short circuit cable
Unscrew ignition from the ignition armature.
Loosen short circuit cable from the socket connection (arrow).

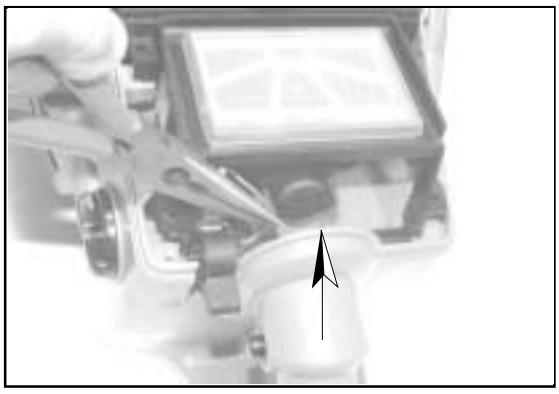


04-03 Removing the ignition/ short circuit cable
Loosen the hose clamp (3) of the intake hose.
Pull the suction hose (4) off the cylinder.



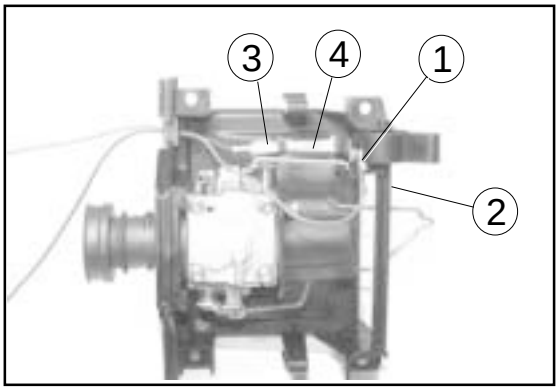
04-03 Removing the ignition/ short circuit cable
Loosen the locking device of the intake elbow from the tank housing. To do this, push both levers inwards (arrow) and lift the intake elbow slightly.

04 Ignition system

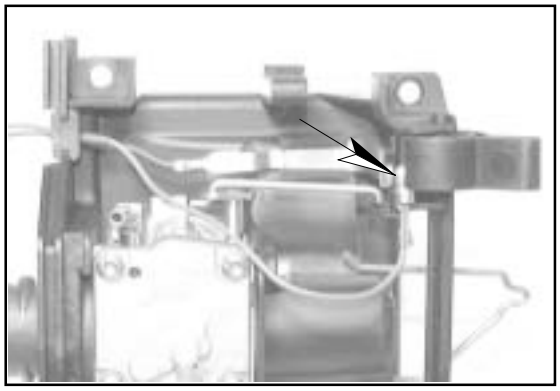


04-03 Removing the ignition/ short circuit cable
Push throttle control rod towards the cylinder using pointed pliers, pulling upwards out of the guide of the gas grip (arrow).

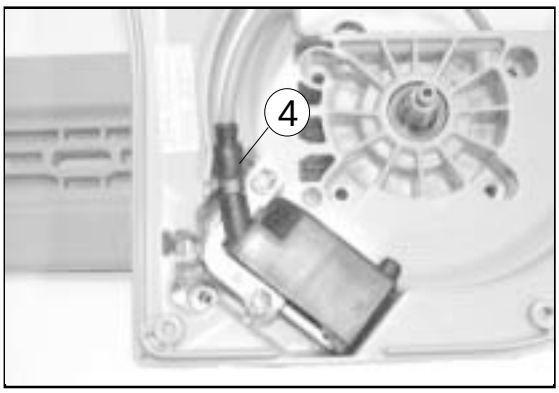
04-03 Removing the ignition/ short circuit cable
Remove intake elbow with carburetor and choke shaft from the tank housing.



04-03 Removing the ignition/ short circuit cable
Pull short circuit cable (1) from its place in the choke shaft (2).
Loosen earth cable (3) from the socket connection of the contact spring (4).



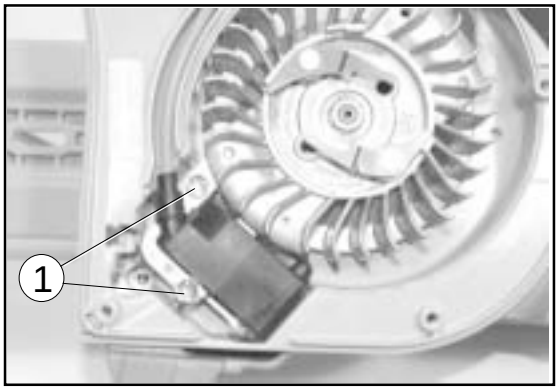
04-03 Assembling the ignition/ short circuit cable
When mounting the short circuit cable, make sure that the connection between the connector lug of the short circuit cable and the contact spring is in order (arrow).



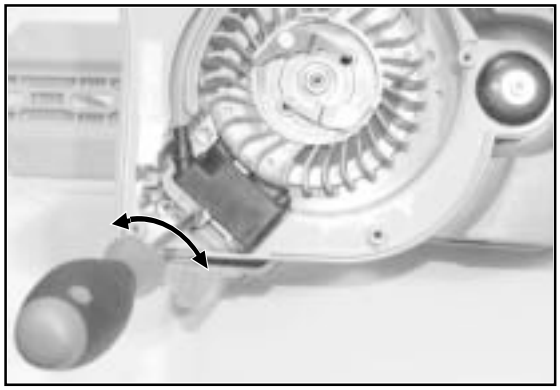
04-03 Assembling the ignition/ short circuit cable
Twist ignition cable into the ignition armature.
Note: To prevent moisture leaking in, fill protective cap (4) with silicon paste 980.007.100 before replacing.

04-03 Assembling the ignition/ short circuit cable
As a safety measure, the short circuit cable will be laid during assembly in the brackets underneath the ignition cable.

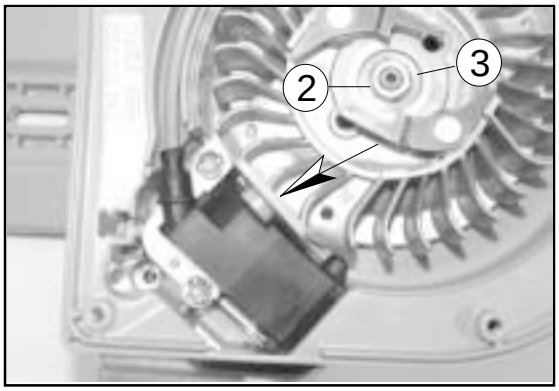
04 Ignition system



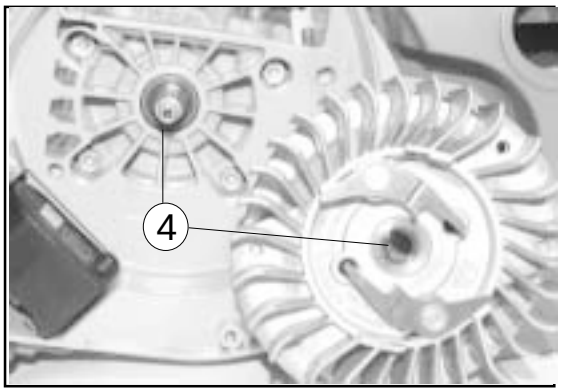
04-04 Removing the ignition armature
Unscrew starting device.
Remove the two screws (1) of the ignition armature. Clip off ignition and short circuit cable.



04-04 Checking the ignition armature
In the event of a fault, first check the ignition earth connection. To do this, loosen and then tighten the screws (1) a few times. then check ignition once again.



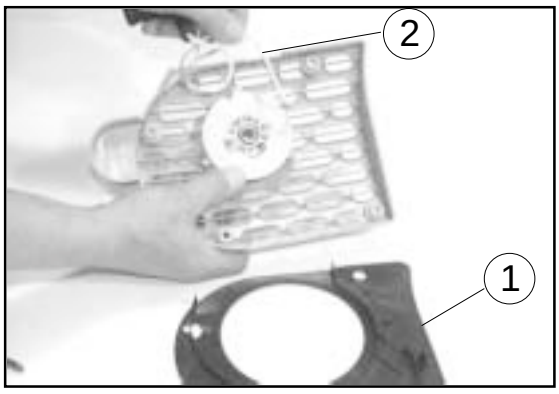
04-04 Mounting the ignition armature
Connect ignition and short circuit cable.
Position setting gauge 944.500.890 (arrow) between ignition device and magnet on the flywheel. Press ignition device firmly whilst at the same time tightening the screws evenly.



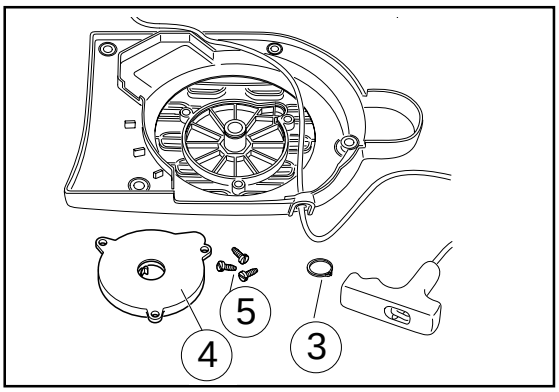
04-05 Mounting the flywheel
Before mounting the flywheel, the cone seat and the crankshaft (4) must be cleaned.
Note. The flywheel is tightened with a torque of 30Nm (see page 22).

04-05 Removing the flywheel
Block the transmission using the piston stop wedge. Unscrew bolt (2) and remove washer (3). Remove flywheel with pulling device 957.427.010.
Warning: to avoid damage to the crankshaft always use the protective cap including with the pulling device.

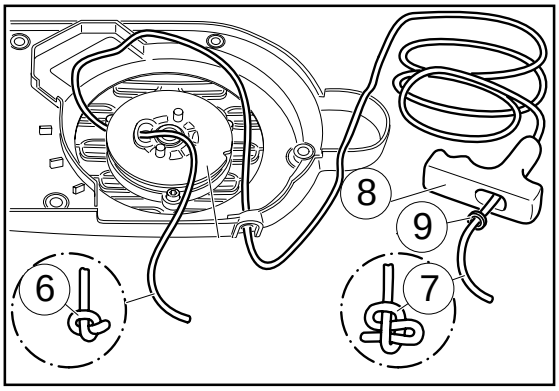
05 Startering system



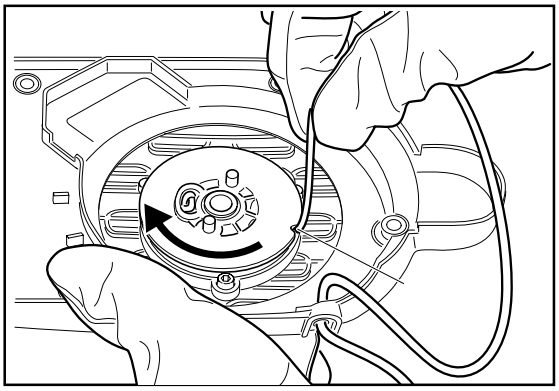
05-02 Removing the starter
Remove air duct (1).
Relieve the tension on the return spring by pulling out the starter cable (2) slightly. Hold cable drum and remove cable from rope drum.Let drum spool back slowly.



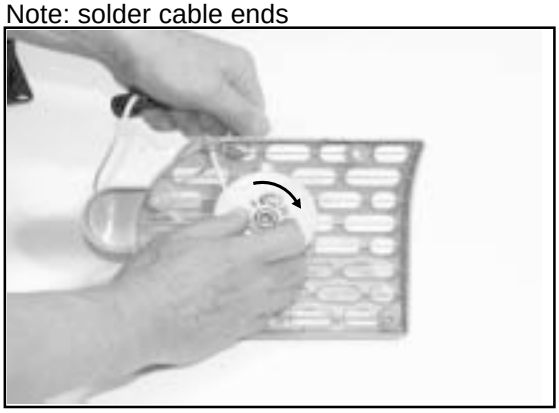
05-02 Removing the return spring
To remove the return spring, remove the circlip ring (3), the return spring (4) is in a cartridge which is fixed to the fan housing with three screws (5).
Note: Grease new spring (944.360.000)



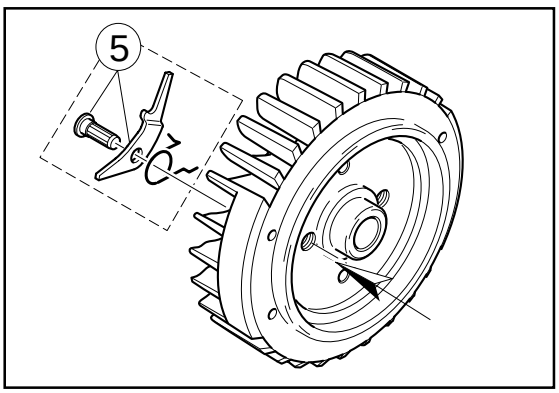
05-02 Mounting the return spring /starter cable
Thread cable through, knotting (6) into the cable drum and knotting (7) into the starter grip (8). The washer (9) is mounted between the starter grip and the knot.
Note: solder cable ends



05-02 Pretensioning the return spring
Wrap the starter cable as far as possible around the drum. Hold cable tight and turn the drum with the cable 2-3 times to pretension.

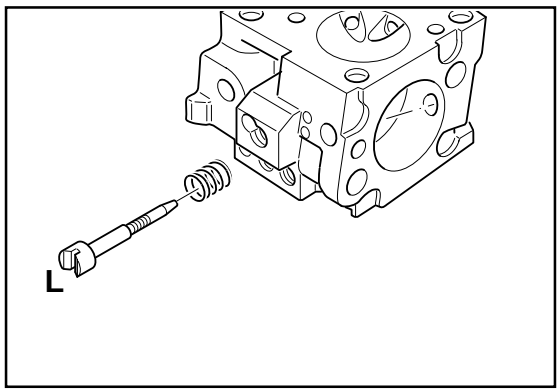


05-02 Checking the return spring
When the starter cable is fully extended, the rope drum must still turn at least half a turn.

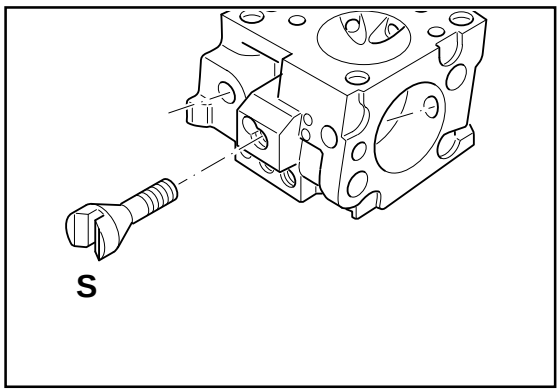


05-03 Replacing the set of bolt/ratchet
Knock out the bolts with a punch (arrow). To assemble, push the bolt in so far that there is only a crack of 0.15-0.2 mm between the ratchet and the bolt (5). For mounting the bolt, use glue 980.009.000.

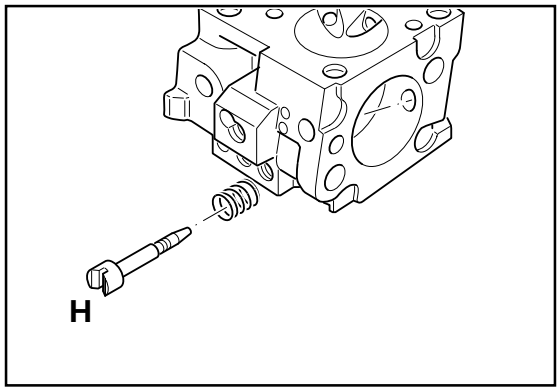
06 Carburetor



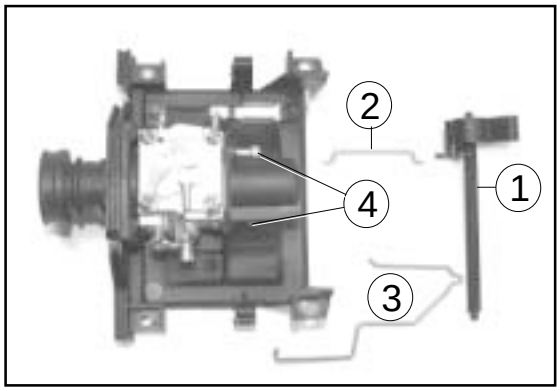
06-01 Setting the carburetor "L"
For the basic setting, turn in the idling nozzle “L” carefully as far as it will go. Then back off “L” nozzle = 11/8.
For fine tuning, the “L” nozzle only needs to be changed by max. +/- 1/8 of a turn.



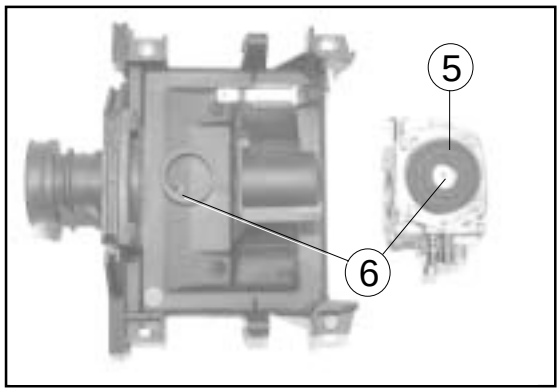
06-01 Setting the carburetor "S"
When during idling the engine speed is too high (moving of cutting disc) or too low (engine stalls), correct the the setting of idling screw "S" (speed) accordingly.



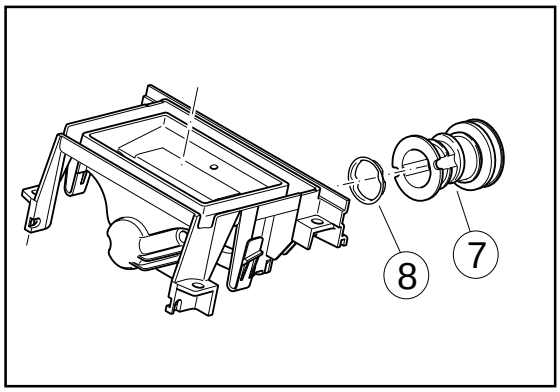
06-01 Setting the carburetor
The main nozzle “H” is set at the factory to 11/8 revolutions.
To reset, the carburetor must be removed.



06-04 Removing the carburetor
Remove intake elbow with carburetor. Remove choke shaft (1), choke rod (2) and throttle control rod (3). Unscrew the two fixing screws (4).

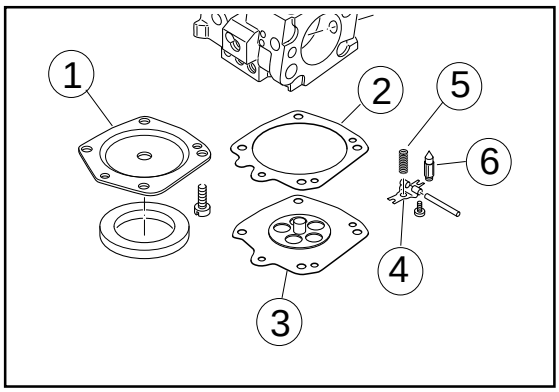


06-05 Removing the carburetor
Remove the carburetor from the intake elbow.
The seal (5) must not block the bore (6) for ventilating the control side of the carburetor (compensation system).

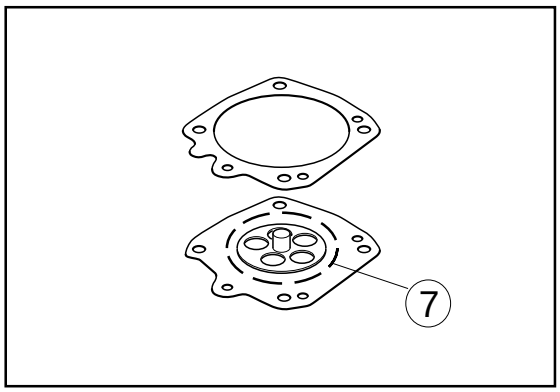


06-08 Intake hose
Pull the intake hose (7) out of the intake elbow and check for damage. Replace the insert (8) in the intake hose again before assembling the carburetor.

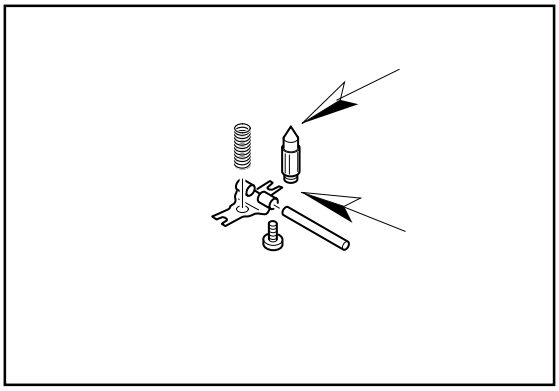
06 Carburetor



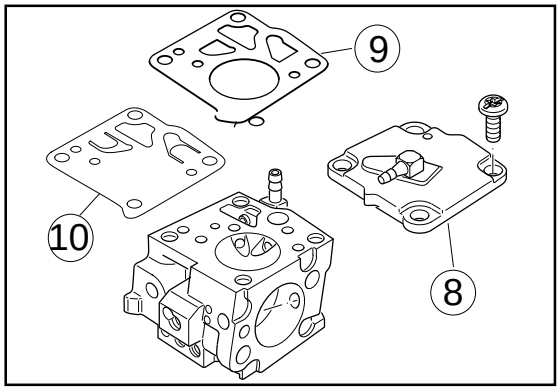
06-03 Carburetor - dismantling the control side
Unscrew cover (1). Carefully remove the seal (2) and diaphragm (3) from the control lever (4). Remove control lever, spring (5) and inlet needle (6) from the carburetor.



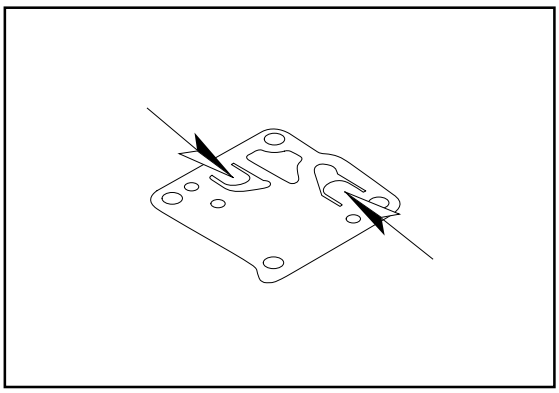
06-03 Carburetor - testing the control membrane
After removing the control diaphragm, it must remain flat. The rim around the stiffening plate (7) must be even. Faulty diaphragm must be replaced immediately.



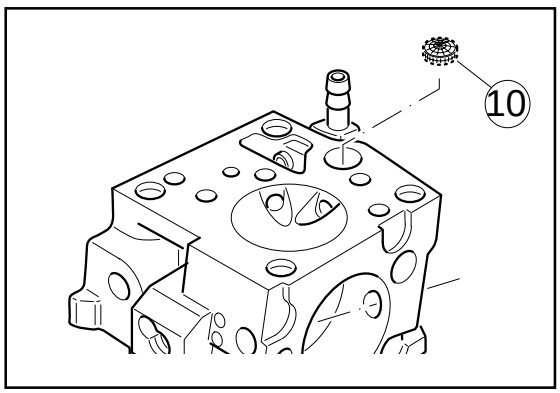
06-03 Carburetor - testing the control unit
After removing the control diaphragm, remove the intake pin with valve rocker and spring.
Note: If there is visible wear (arrows), the control unit must be replaced.



06-04 Carburetor - dismantling the pump side
Unscrew cover (8). Remove seal (9) and diaphragm (10) from the carburetor.

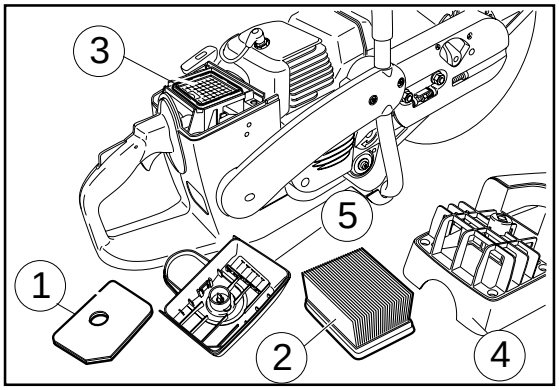


06-04 Carburetor - Testing the pump membrane
The two valve flaps (arrow) must rest flat on the body of the carburetor. Damaged diaphragms must be replaced immediately, as starting and running problems may otherwise occur.

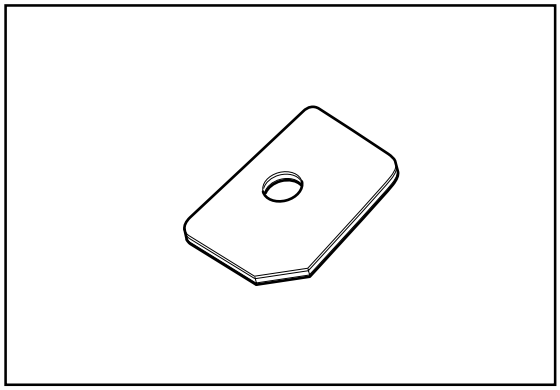


06-04 Carburetor - Testing the fuel sieve
The fuel filter (11) may be carefully removed from the carburetor body for cleaning with a pointed object. After cleaning replace the fuel filter with a pin.

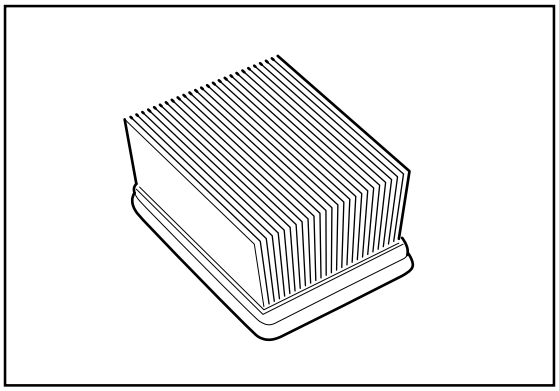
07 Hood system / Air filter / Winter operation



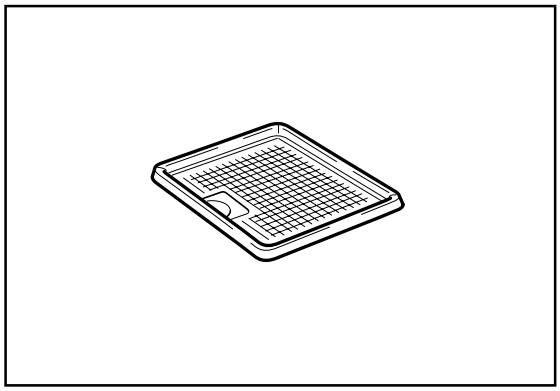
07-03 Removing the air filter
Remover filter hood (5), unscrew cover hood (4).
Filter system consists of the pre-filter (1), the paper cartridge (2) and the inside filter (3).



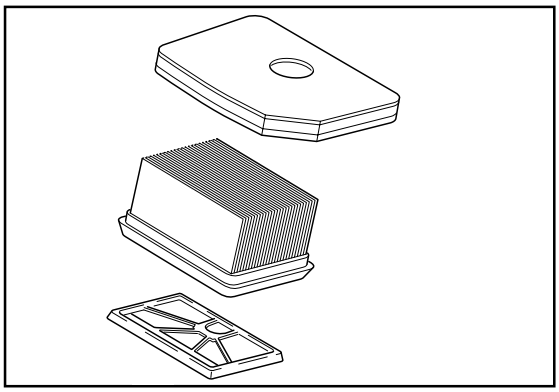
07-04 Cleaning the filter - pre-filter
Clean the pre-filter in luke-warm soapy water using normal washing-up liquid. Dry before replacing.
Note: under extrem dusty conditions, the pre-filter may need to be oiled slightly.



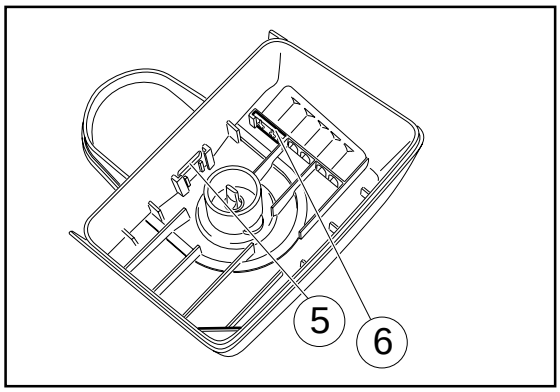
07-04 Cleaning the filter - paper cartridge
Unscrew the 4 screws on the cover hood (4). To clean, fan the paper cartridge out slightly and tap gently.
Note: never wash the paper cartridge to clean it.



07-04 Clean filter - inside filter
The inside filter should also be washed out in luke-warm soapy water.

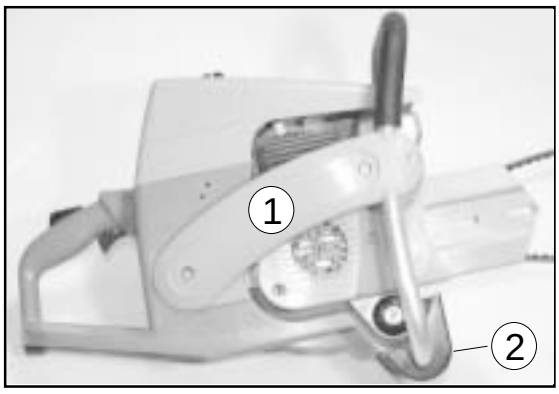


07-05 Filter system
Only well-maintained filters will guarantee efficient engine performance and a long working life. Damaged or worn filters must therefore be replaced.

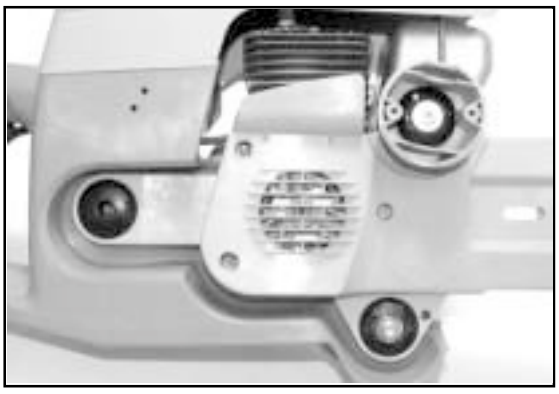


07-06 Winter heating
Temperatures below zero may cause the filter/ carburetor to freeze.
Remove summer-winter insert from summer mode (5) and insert in winter mode (6) as shown. Return when temperature is above 0°C.

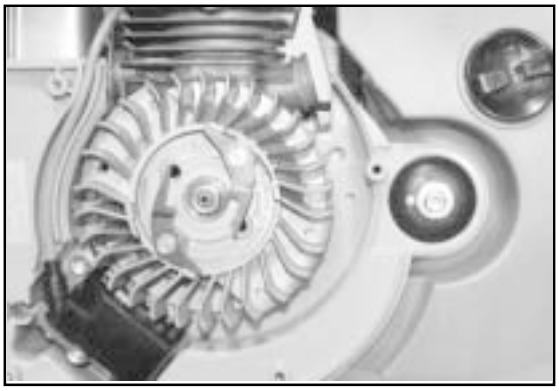
08 Front handle with stand / vibration damping system



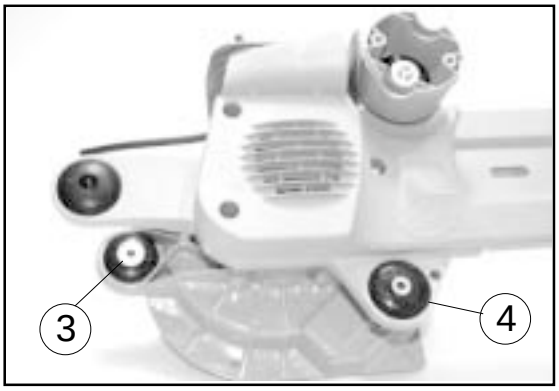
08-01 Removing and replacing the bracket handle
To dismantle the front handle, the strut (1) with 3 screws and the foot (2) with 2 screws must be unscrewed.



08-03 Replacing the vibration absorber
The system consists of 4 vibration absorbers, 3 of which are on the clutch side.
To dismantle them, the front handle, filter system and tank must be removed.

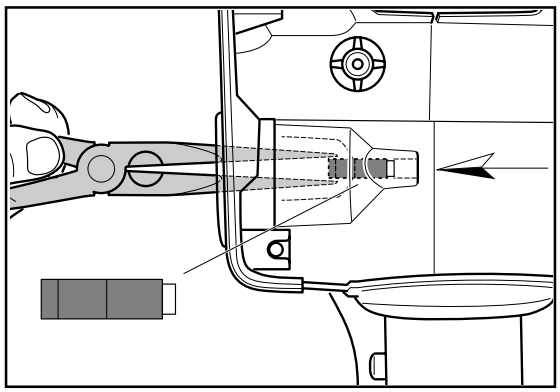


08-03 Replacing the vibration absorbers
The fourth vibration absorber is on the magnet side.
To dismantle it, the starter device must be removed.

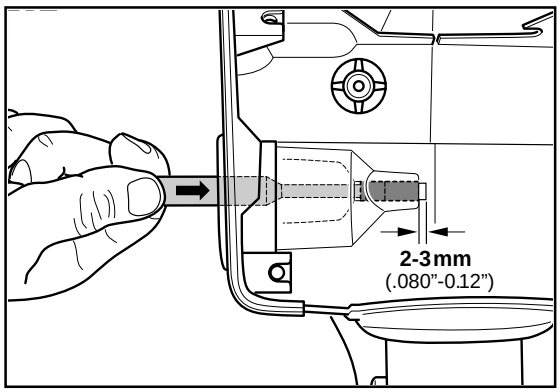


08-03 Replacing the vibration absorbers
The vibration absorbers are slotted into the housing. Mount the sleeves (3+4) with the collars inwards.
Grease vibration absorbers (980.007.100).

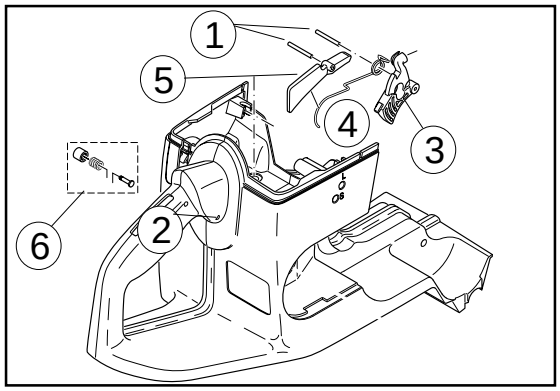
09 Fuel tank



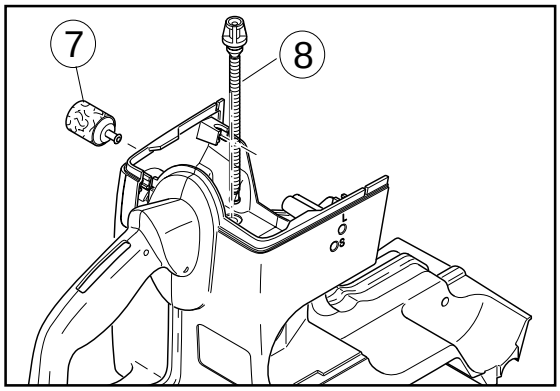
09-02 Removing the ventilation valve
Push the ventilation valve with a pin into the tank (arrow) and remove with pointed pliers through the filler opening.



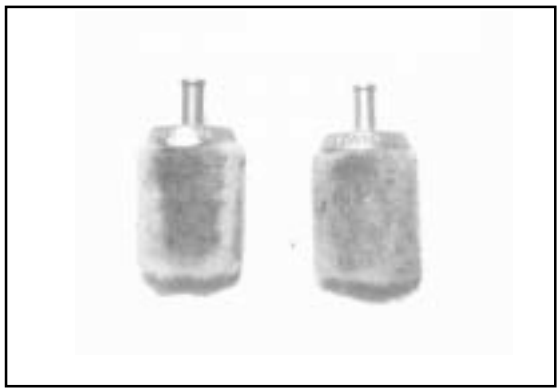
09-02 Inserting the ventilation valve
Press the new ventilation valve with a pin into the housing until the white sinter plastic project about 2-3 mm beyond the tank.



09-03 Replacing the throttle lever mechanism
Push the two cylindrical pins (1) out of the handle dish (2). The throttle lever (3), spring (4) and throttle lock (5). The throttle lock (6) for half throttle can also now be replaced.



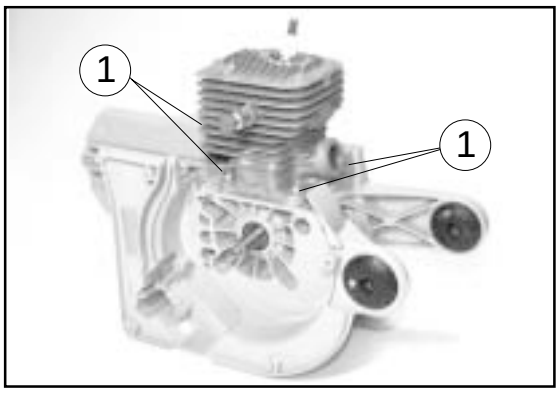
09-04 Replacing the fuel pipe
Unscrew tank cap, remove suction head (7) from tank and pull off the suction pipe (8). Pull suction pipe upwards out of the tank.



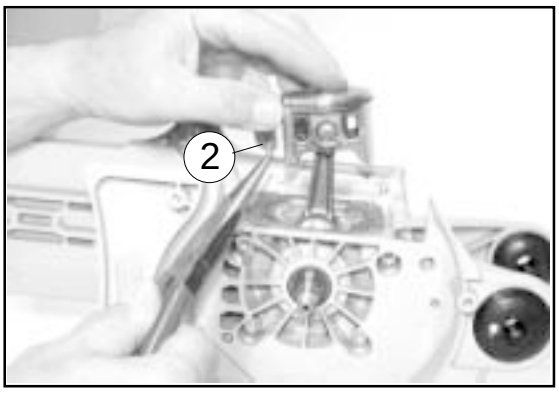
09-05 Testing the fuel filter
Dirty felt filters or filters which have become hardened/blocked with fuel will lead to leaning of the fuel/air mix and will damage the engine.
Note: They fuel filter must therefore be cheked/ replaced regularly.

09-05 Testing the fuel filter
A fingernail test can be used to check whether the filter is blocked.
Easy to push in = filter OK
Cannot be pushed in = filter blocked, replace as a matter of urgency.

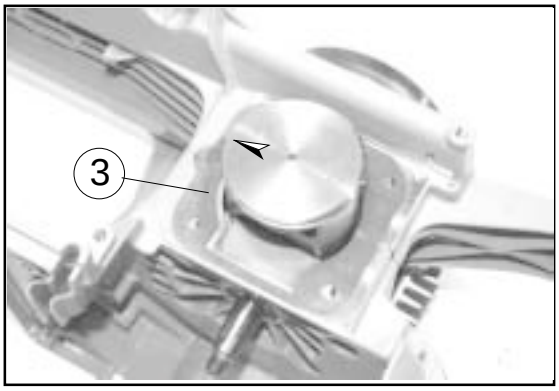
10 Cylinder / piston / decompression valve



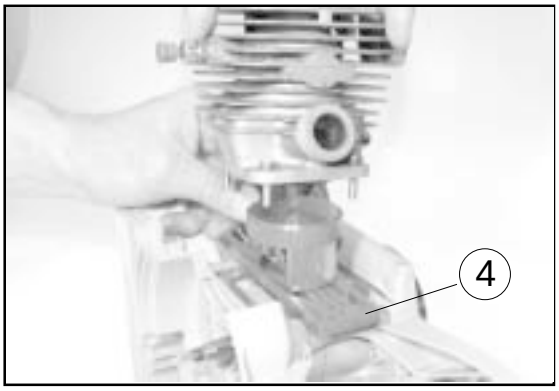
10-01 Dismantling the cylinder
To dismantle the cylinder, unscrew the 4 screws (1) from the cylinder foot.
Pull cylinder off crankcase and piston.



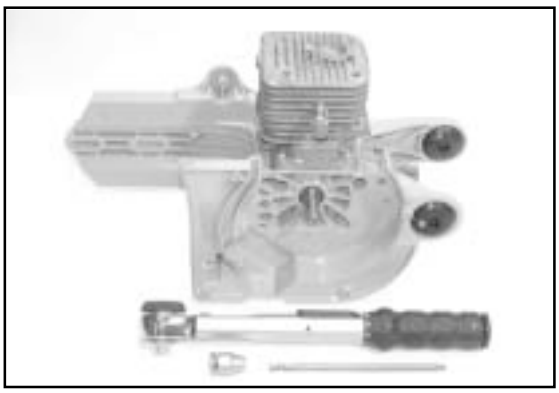
10-01 Dismantling the cylinder - piston
Remove piston pin securing ring (2) from the annular slot in the piston using pointed pliers. Push piston pin out.
Note: During assembly, make sure the securing ring clicks completely into the groove.



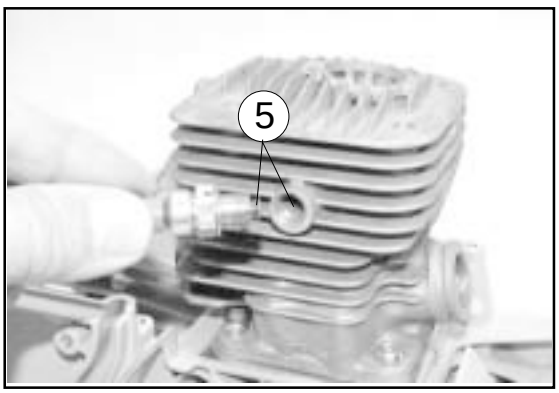
10-01 Mounting the cylinder - piston
When mounting piston, the arrow on top of the piston has to point in direction of muffler.
Note: Before assembling the piston ensure that the cylinder base gasket (3) is fitted correctly.



10-01 Mounting the cylinder
Position the fork (4) of the piston ring tightening device (parts no. 944.601.001) onto the crankcase. Press the piston ring together using the ring clamp. When positioning the cylinder, push the ring clamp away downwards.

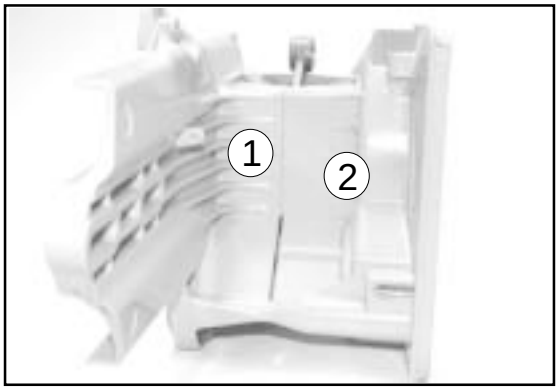


10-01 Mounting the cylinder
After positioning the cylinder, tighten fixing screw with a force of 14 Nm (see page 22).

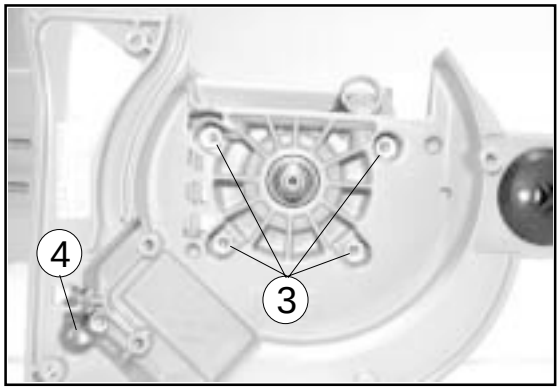


13-02 Testing the decompression valve
Unscrew valve and check valve seating (5) and the hole in the cylinder for dirt. Replace valve if dirty. Clean hole carefully.

11 Crankcase / Crankshaft

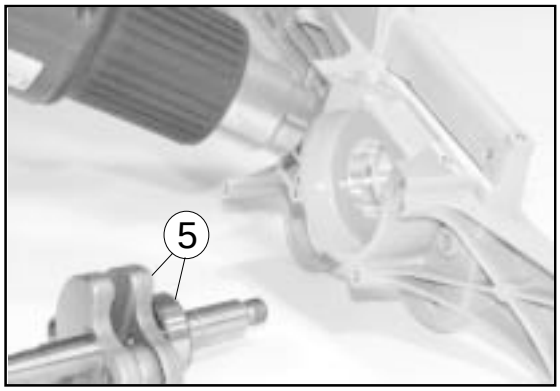


11-03 Complete crankcase
The complete crankcase is divided into the crankcase magnet side (2) "MS", and the crankcase clutch side (1) "KS".

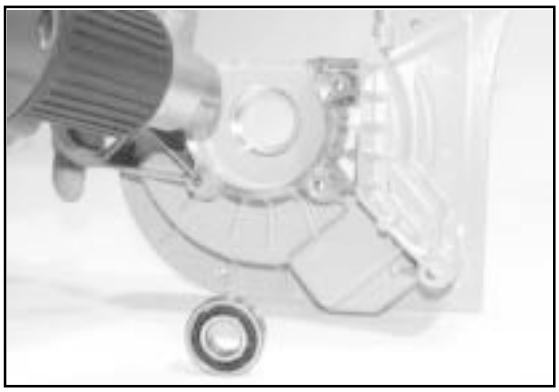


11-03 Removing the crankcase "MS"
To dismantle the magnet side (MS), unscrew the 4 fixing screws (3) and the left lower screw (4).

11-03 Dismantling the crankcase
After removing the 5 fixing screws, separate the crankcase carefully by tapping with a plastic hammer.



11-03 Replacing the crankshaft / bearing
First push bearing on to the crankshaft, then insert crankshaft with bearing (5) into the case, "KS". Place gasket on centering pins.
Note: To dismantle or assembly the bearings, always heat the crankcase to 100-120°C.

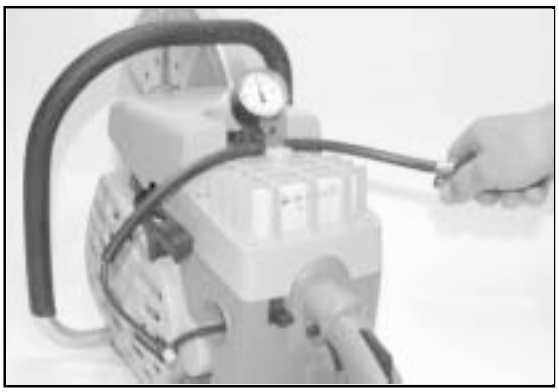


11-03 Mounting the bearing / crankcase
Heat the crankcase "MS" and fitt bearing into the case.
Note: The bearings faces with its open side to the crankshaft. Before installation moisten the bearings with "Loctite 601".

11-03 Mounting the crankcase
Tighten the 5 fixing screws with a torque of 10 Nm (see page 22).

12 Testing

12-02 Testing the ignition system
To test the ignition system / spark plug, use test device no. 965 010 030.

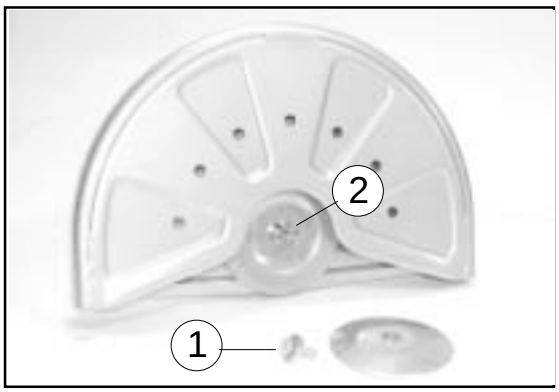


12-03 Testing the carburetor
To test the carburetor in the installed state, pull fuel line out off the fuel tank. Pull off the fuel filter and attach pressure test device no. 965 004 000 to fuel line by using a connecting nipple.

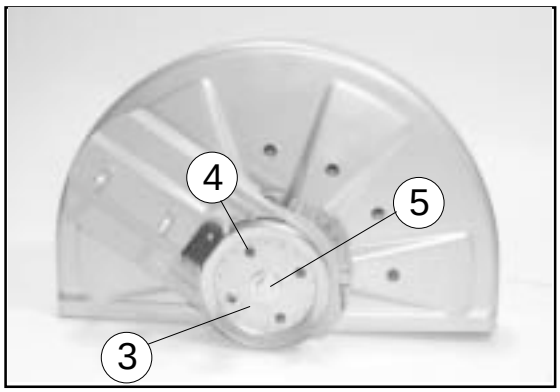
12-03 Testing the carburetor
Test carburetor at 0.5 bar.

12-04 Tightening the screw connections with a torque wrench
Fix the cylinder, crankcase and muffler screws, plus flywheel nut and clutch hub with the specified torque (see page 22).

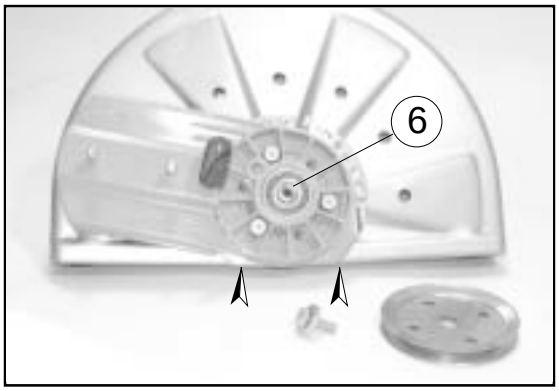
13 Cutting attachment



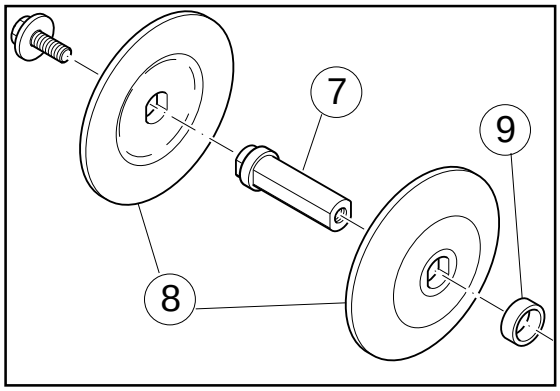
13-01 Replacing the pressure disc
Undo screw (1) and remove pressure disc.
Note: With the 25.4 mm (1") axle, the inner flange is located behind the recess of the axle (2). Remove axle and flange together.



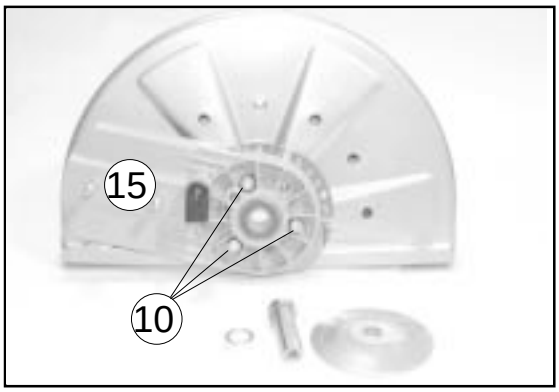
13-02 Replacing the V-belt pulley
Block the V-belt pulley (3). To do this, push a pin through the hole (4) in the V-belt pulley into the housing. Remove screw (5).



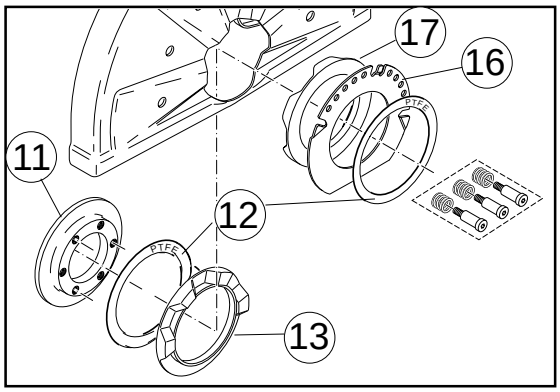
13-02 Mounting the V-belt pulley
When mounting the pulley, make sure that the shim 900.006.179 (6) is mounted between the V-belt pulley and the ball bearing.
Note: The V-belt pulley is only fixed when the cutting disk is mounted.



13-03 Replacing the drive axle
To remove the axle (7), the pressure disk (8) and the V-belt pulley must be dismantled.
Note: when mounting the inner flange disk, make sure that the spacer sleeve (9) 394.228.020 is mounted.



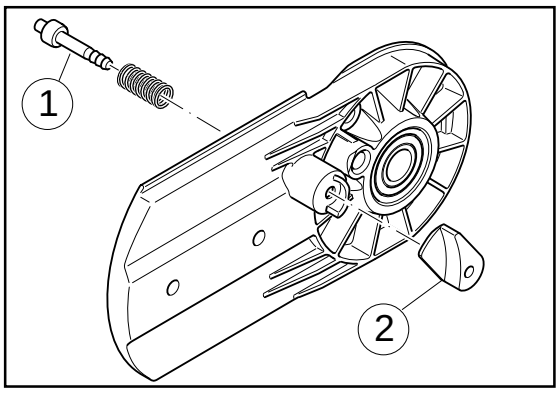
13-04 Removing the complete pressure ring
Unscrew the 3 screws with springs (10), the housing (15) and the pressure ring (11).
Note: the screws (10) have to be fitted in an angle of 120^0 and are tightened with 10 Nm.



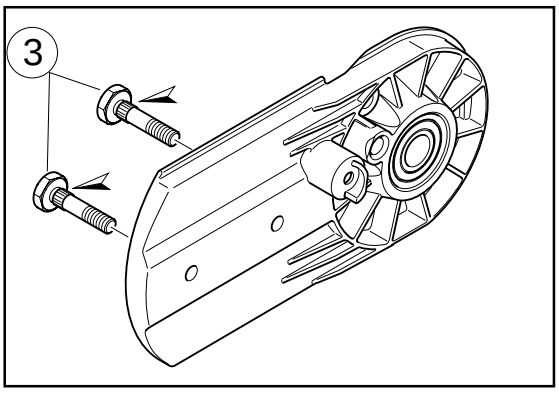
13-05 Cutter guard holding attachments
When mounting, make sure that:

inside:	outside:
- pressure ring (11)	- housing (15)
- Teflon ring (12)	- Teflon ring (12)
- rubber part (13)	- locking plate (16)
	- rubber part (17)

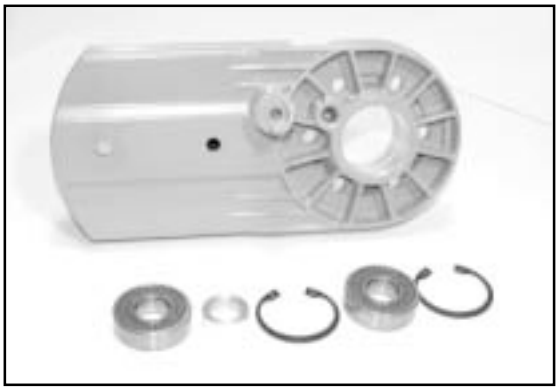
13 Cutting attachment



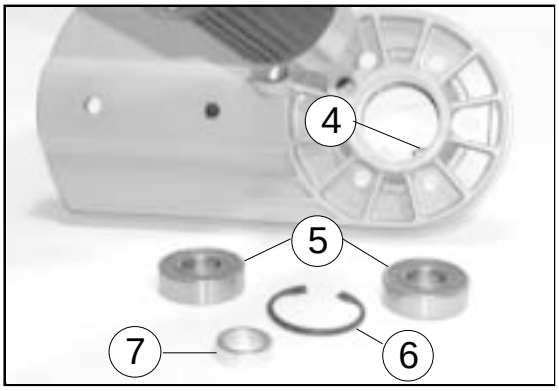
13-06 Replacing the guard stop
Knock the shaft (1) with a pin out of the handle (2). In assembly, push the new handle onto the shaft until the shaft is flush with the outside edge of the handle.



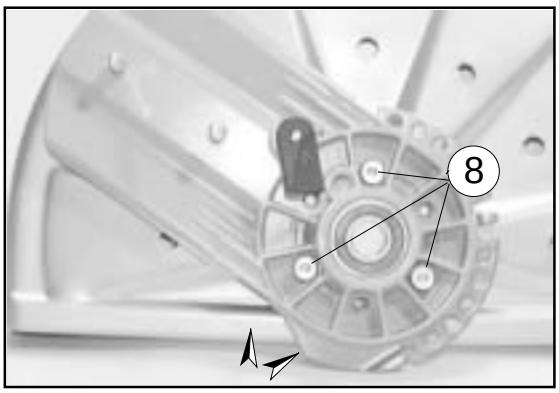
13-07 Replacing the fixing screws
Push the screws (3) out of the housing. Before inserting, wet the stop area (arrow) on the screws with glue 980.009.000.



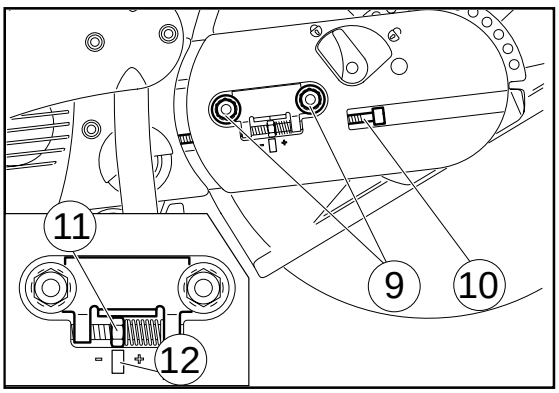
13-08 Removing the cutting device bearings
Warm housing, remove ball bearings, spacer sleeve and guard rings from the housing.



13-08 Mounting the cutting device bearings
Mount external guard ring (4). Heat housing up to approx. 100°C. Push ball bearing (5) up against the ring. Insert middle ring (6) and spacer sleeve (7), then push second ball bearing up to ring.



13-00 Adjusting the cutter guard holding attachment
If the guard is subjected to high stresses , the holding attachment and the guard may no longer be aligned (arrow). for correction loosen screw (8) and adjust holding attachment (see picture 13-02/13-05, page 20).



13-00 Tensioning the V-belt
After mounting the cutting device, tighten the nuts (9) by hand. Turn the screw (10) until the square nut (11) is aligned with the marking (12) on the hood. Tighten the nuts with 20Nm.

Torques

Assy. set Typ	PC-6212 / 6214 PC-7312 / 7314
Muffler	**10 + 1,0****
Crankcase	**10 + 1,0****
Cylinder	**14 + 1,0****
Ignition coil	**6 + 1,0****
Front handle	7 +/- 0,5
Rubber mounts	7 +/- 0,5
Carburetor	1,5 +/- 0,5
clutch	55 +/- 0,2
Flywheel	30 +/- 2,5
Sparkplug	25 +/- 2,5
V-belt pully	25 + 5,0

**** Srews with locking seration**

Notice

DOLMAR GmbH
Postfach 70 04 20
D-22004 Hamburg
Germany

Specifications subject to change without notice

Form: 995.716.120